UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NORTH CAROLINA
NORTHERN DIVISION

SEVERN PEANUT CO, INC., et al.,	)	
	)	
Plaintiffs,	)	
	)	
v.	)	DOCKET NO. 2:11-cv-00014-BO
	)	
INDUSTRIAL FUMIGANT CO. and ROLLINS INC.,	)	
	)	
Defendants.	)	

PLAINTIFFS' MEMORANDUM OF LAW IN OPPOSITION TO MOTION TO EXCLUDE PLAINTIFFS' EXPERT WITNESSES

INTRODUCTION

Defendants, Industrial Fumigant Company ("IFC") and Rollins, Inc. ("Rollins"), have moved to exclude the testimony of two of plaintiffs' experts, fire investigator Lester V. Rich and forensic chemical engineer John L. Schumacher, regarding the origin and cause of the fire at the domed peanut storage facility in Severn, North Carolina. The defendants do not challenge the qualifications or credentials of Messrs. Rich and Schumacher as fire investigators[1] nor do they challenge the overall methodology followed by these experts. Defendants' sole challenge is the claim that these experts' opinion that the piling of aluminum phosphide tablets caused the fire does not have a scientifically reliable foundation.

[1] Defendants do not challenge the credentials and experience of Messrs. Rich and Schumacher for good reason. Lester Rich is an experienced and certified fire origin and cause investigator. As a Senior Special Agent Certified Fire Investigator with the U. S. Dept. of Justice, Bureau of Alcohol, Tobacco, Firearms and Explosives and a member of the National Response Team, Mr. Rich responded to numerous significant incidents including the Oklahoma City Bombing and the 9/11 attack on the Pentagon. Likewise, John Schumacher is an experienced and certified fire origin and cause investigator who is also a licensed professional engineer with a masters in chemical engineering.

In a case with remarkably similar facts, where it was also alleged that a defendant's alleged improper fumigation caused an explosion aboard a vessel, the United States District Court for the Eastern District of Louisiana denied the defendant's motion to exclude the plaintiffs' expert who offered the opinion that the piling of aluminum phosphide tablets caused the explosion. *Cargill, Inc. v. Degesch America, Inc.*, No. 11-2036 (E.D. La. Nov. 12, 2013) (unpublished and attached). The defendants in *Cargill* advanced the same arguments that the defendants assert here. The plaintiffs' expert, Richard Bigler, opined that the defendant's misapplication of the fumigant tablets in piles caused the explosion in the vessel's cargo holds. The court concluded that the opinion offered by the plaintiff's expert, which was supported by many of the same references relied upon by the experts in the present case, was reliable. The court concluded that Bigler's opinion was reliable because the opinion was based, in part, on a published study co-authored by John Schumacher.[2] *Cargill, Inc. v Degesh America, Inc.*, at *3-4*; See* Section IV. C. *infra*. Coincidentally or not, Mr. Schumacher is one of the plaintiffs' experts here that is being challenged by the defendants.

Because the challenged expert testimony on the origin and cause of the fire is based on valid scientific foundations, defendants' *Daubert* motion should be denied.

STATEMENT OF RELEVANT FACTS

For the purposes of responding to defendants' motion, the relevant facts are largely undisputed. However, the following additional relevant facts should be noted:

[2] Study by John L. Schumacher and Zachary J. Jason entitled Aluminum Phosphide-Based Fumigants As An Ignition Source In Agricultural Commodity Storage Structure Fires. (Ex. A) The study was presented at ISFI 2012-Proceedings of the 5th International Symposium on Fire Investigation Science and Technology. As stated in its introduction, "Since its inaugural presentation in England in 2004, ISFI has become the premier fire investigation science and technology transfer conduit for the profession – bringing fire investigation practitioners, educators, researchers, and attorneys together for the benefit of all." The Schumacher study was referenced and relied upon by Lester Rich in his report at p. 22, reference no. 52 (DE #75-8).

- The interior of the domed storage facility was essentially a bare concrete structure with no lighting, machinery or energized electrical equipment. Pls. Answers to Defs' 1st Set of Int. p. 6 (DE #75-2).
- The Fumitoxin applicator's manual contains language required by the United States Environmental Protection Agency ("EPA"), specifically stating:

  Aluminum phosphide tablets and pellets, outside their containers, should not be stacked or piled up or contacted with liquid water. This may cause a temperature increase, accelerate the rate of gas production and confine the gas so that ignition could occur. It is preferable to open containers of aluminum phosphide products in open air as under certain conditions, they may flash upon openings. (emphasis added) *See* Section IV B. *infra.*
- Phosphine gas is "pyrophoric," which means it may spontaneously combust upon contact with oxygen without needing elevated temperatures or an applied ignition source. *See* Section IV. A. *infra*.
- In performing the application, Brian Lilley and Randy Turner, the IFC applicators, removed one metal hatch measuring 15 x 41 inches and positioned themselves at opposite ends at the narrower 15 inch sides of the opening. Defs. Resp. to Plts 1st Set of Interr. p. 3 (DE #75-3); Deposition of Randall Turner ("Turner Dep. at") at 166 (DE #75-7).
- A metal frame partially obstructed access to the opening. Deposition Ex. 20 (Ex. B).
- Mr. Lilley and Mr. Turner did not stop and look into the dome at any time while they were distributing all 49,000 tablets and said they could tell the tablets were not piling by hearing them scattering and rolling across the peanuts. Deposition of Brian Lilley ("Lilley Dep. at") at 66 (DE #75-10), Turner Dep. at 171-172 (DE #75-7).

- Both applicators testified that they did not know how far they could fling a tablet, did not know what constituted a pile of tablets, and had no plan to rectify the situation if they saw piling within the dome . Lilley Dep. at 29 & 87 (DE #75-10), Turner Dep. at 65 & 169 (DE #75-7).
- After distributing all 49,000 tablets, Turner and Lilley then looked into the dome with a flashlight but admitted that there were areas they could not see. Lilley Dep. at 88 (DE #75-10), Turner Dep. at 215 (DE #75-7).

ARGUMENT

I. Standard of Admissibility

The admissibility of expert testimony "entails a preliminary assessment of whether the reasoning or methodology underlying the testimony is scientifically valid and of whether that reasoning or methodology properly can be applied to the facts in issue." *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 592-93 (1993).

Under Rule 702, trial judges act as gatekeepers to "ensure that any and all scientific testimony ... is not only relevant, but reliable." *Id*. at 589. In conducting a *Daubert* analysis, the trial court asks two questions: (1) is the proffered scientific evidence valid and reliable, and (2) will the testimony aid the trier of fact in deciding the ultimate issues in the case? *United States v. Barnette*, 211 F.3d 803, 815 (4th Cir. 2000).

The Court in *Daubert* identified several factors that may bear on a judge's determination of the reliability of an expert's testimony. Daubert, 509 U.S. at 592-594. Those factors include: (1) whether a theory or technique can be or has been tested; (2) whether it has been subjected to peer review and publication; (3) whether a technique has a high known or potential rate of error and whether there are standards controlling its operation; and (4) whether the theory or technique

enjoys general acceptance within a relevant scientific community. *See Id.; Cooper v. Smith & Nephew, Inc.*, 259 F.3d 194, 199 (4th Cir. 2001).

Although *Daubert* provides factors that may be considered by the Court in its evaluation of the expert witness's methodology, the list of factors is not exhaustive, and the Court, in its discretion, may consider different factors to test reliability. *Daubert*, 509 U.S. at 594. These factors are not exclusive, however, and they need not be considered in every case. The *Daubert* reliability factors should only be relied upon to the extent that they are relevant and the district court must customize its inquiry to fit the facts of each particular case. *See Id.* No single factor is necessarily dispositive of the reliability of a particular expert's testimony. Advisory Committee Notes, 2000 Amendments, Fed. R. Evid. 702. "In making its initial determination of whether proffered testimony is sufficiently reliable, the Court has broad latitude to consider whatever factors bearing on validity that the court finds to be useful; the particular factors will depend upon the unique circumstances of the expert testimony involved." *Westberry v. Gislaved Gummi* AB, 178 F.3d 257, 261 (4th Cir. 1999). "The inquiry to be undertaken by the district court is a 'flexible one' focusing on the 'principles and methodology' employed by the expert, not on the conclusions reached." *Id.* (citing *Daubert*, 509 U.S. at 594-595).

A party's *Daubert* objection to proffered expert testimony or reports does not, however, convert a trial judge into the finder of fact. Expert testimony is subject to scrutiny by the traditional (and appropriate) means of attacking evidence, i.e. "[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof." *Daubert,* 509 U.S. at 596. "This principle is based on the recognition that our adversary system provides the necessary tools for challenging reliable, albeit debatable, expert testimony." *Argonaut Ins. Co. v. Samsung Heavy Indus. Co. Ltd.*, 929 F. Supp. 2d 159, 164-65 (N.D.N.Y. 2013) (citation

omitted). The rejection of expert testimony is the exception rather than the rule. Advisory Committee Notes, 2000 Amendments, Fed. R. Evid. 702. These guiding principles render defendants' challenge against Mr. Rich and Mr. Schumacher devoid of merit.

II. The Proffered Expert Testimony is Scientifically Valid and Reliable

The defendants do not question or challenge the qualifications of either Lester Rich or John Schumacher, nor do they challenge the widely accepted methodology for fire investigations followed by both experts in reaching their opinions. The question presented by defendants focuses on whether there is a scientifically valid foundation supporting their opinions.

As confirmed by Mr. Schumacher and Mr. Rich, by numerous courts throughout the country, and as acknowledged by defendants' origin and cause expert John Walker, NFPA 921: Guide for Fire & Explosion Investigations (2008 ed.) (hereinafter "NFPA 921") is considered authoritative in the field of fire investigation. See *Fireman's Fund Ins. Co. v. Tecumseh Prods. Co.*, 767 F. Supp. 2d 549, 554 (D. Md. 2011); *Thompson v. State Farm Fire &Cas. Co.*, 548 F. Supp. 2d 588, 592 (W.D. Tenn. 2008) (quoting *Ind. Ins. Co. v. Gen. Elec. Co.*, 326 F. Supp. 2d 844, 849 (N.D. Ohio 2004).

"The systematic approach recommended [for fire and explosion investigation] is that of the scientific method, which is used in the physical sciences." NFPA 921 § 4.2 (Ex. C). The scientific method includes recognizing and defining the problem to be solved, collecting data, analyzing data, developing a hypothesis or hypotheses (inductive reasoning), and testing the hypothesis or hypotheses through deductive reasoning. NFPA 921 § 4.3.1 - 4.3.6 (Ex. C). NFPA 921 §§ 4.3 et seq. applies the scientific method to that of fire investigation. Similarly, NFPA 921 §4.4 et seq. describes the major steps of the investigation from inception through final analysis.

Particularly helpful to this Court for purposes of deciding this motion is the following excerpt from NFPA 921 § 4.4.3.2 (Ex. C):

> The actual investigation may include different steps and procedures, which will be determined by the purpose of the assignment. These steps and procedures are described in detail elsewhere in the document. A fire or explosion investigation may include all or some of the following tasks: a scene inspection or review of previous scene documentation done by others; scene documentation through photography and diagramming; evidence recognition, documentation, and preservation; witness interviews; review and analysis of the investigations of others; and identification and collection of data or information from other appropriate sources.

The investigator should use the scientific method (see Chapter 4) as the method for data gathering, hypothesis development, and hypothesis testing regarding the consideration of potential ignition sources. This process involves the development and testing of alternate hypotheses. NFPA 921 § 18.5.3 (Ex. C). NFPA 921 makes it clear that "testing" a hypothesis can take many different forms including cognitive experiments:

> Testing of the hypothesis is done by the principle of deductive reasoning, in which the investigator compares his or her hypothesis to all known facts as well as the body of scientific knowledge associated with the phenomena relevant to the specific incident. NFPA 921 § 4.3.6 (Ex. C).

In employing the systematic approach and as part of the scientific method of developing a hypothesis and deductively testing each hypothesis, both Mr. Rich and Mr. Schumacher identified all potential ignition sources for the fire including a lightning strike, electrical failure, spontaneous combustion of the peanuts, mechanical failure, an intentional act, or the ignition of the phosphine gas by exceeding the LEL in a localized area. Rich and Schumacher Expert Reports (DE #75-8 and #75-13). Some of these potential ignition sources, such as electrical and mechanical failures, were easily excluded as not being present in the area of origin (i.e. because the interior of the dome was essentially a bare concrete structure with no lighting, machinery, or energized electrical equipment.)

For the remaining potential ignition sources, Mr. Rich and Mr. Schumacher then performed a systematic analysis of each of the possible causes and tested each hypothesis against the known facts, scientific principles, and reference material, to determine whether each of these hypotheses could have caused the fire. In their reports and deposition testimony, they provided a detailed evaluation of the deductive reasoning and thought process that led them to eliminate all possible causes of the fire other than the ignition of the phosphine gas. They relied upon a Strikenet report, the testimony of the witnesses and other qualified individuals to eliminate a lightning strike and an intentional act. Importantly, they detailed their deductive reasoning supporting the elimination of spontaneous combustion of the peanuts and provided their analytical reasoning leading them to conclude that the ignition of the phosphine gas caused the fire. *See,* Rich and Schumacher Expert Reports (DE #75-8, #75-13, #75-14 and #75-15).

III. Piling of Aluminum Phosphide Tablets is a Recognized Hazard in the Fumigation Industry and the Evidence Supports that IFC's Application Method Resulted in Piling of Fumitoxin Tablets

Defendants argue that Mr. Rich and Mr. Schumacher's opinion that IFC's application method would result in piling of tablets is sheer speculation and that there is no evidence, either direct or circumstantial, to support the opinion. A review of the evidence and testimony by the IFC applicators, as evaluated by both Rich and Schumacher in their respective reports, provides abundant circumstantial evidence supporting a reasoned opinion that piling would have occurred.

As recognized by NFPA 921 and case law, an ignition source will be at or near the point of origin at the time of ignition. However, there are occasions where there is no physical evidence of the ignition source but an ignition sequence can be hypothesized based on other data. NFPA 921 § 18.3.1 (Ex. C). "Ordinarily, there is no direct evidence of the cause of a fire, and therefore, causation must be established by circumstantial evidence." *Fowler-Barham Ford, Inc.*

v. Ind. Lumbermens Mut. Ins. Co., 45 N.C. App. 625, 628, 263 S.E.2d 825, 827 (1980) (citation omitted).

In particular, the evidence shows that:

(1) The applicators opened and removed a single steel hatch measuring only 15 x 41 inches located on the floor of the headhouse situated on top of the concrete dome; Turner Dep. at 160 (DE #75-7);

(2) The two applicators, facing each other and each positioned at opposite ends of the narrow 15 inch side of the rectangular opening, began shaking tablets from flasks down onto the mound of peanuts located 20-25 ft. below; Turner Dep. at 162, 164, 166 (DE #75-7);

(3) Neither of the applicators could see inside the darkened dome while they were emptying the 98 flasks of fumigant tablets; Turner Dep. at 168, 174 (DE #75-7);

(4) The back and forth arm movement within the 15 inch opening would cause the 49,000 tablets to be distributed in a fan pattern with the majority of tablets falling directly below the hatch; Deposition of John B. Mueller ("Mueller Dep. at") at 99, 101, 107 (Ex. D);

(5) Metal bars situated directly in front of the opening further limited the arm movement of each applicator; Deposition Ex. 20 (Ex. B);

(6) The distance and location that the tablets were applied could not be controlled with any accuracy; Lilley Dep. at 67 (DE #75-10); Turner Dep. at 169 (DE #75-7);

(7) The flasks have a narrow neck causing the tablets to periodically clog and requiring the applicator to shake the flask in an up and down motion resulting in the tablets dropping straight down. Deposition of Carol L. Jones, Ph.D. ("Jones Dep. at") at 179, (Ex. E); Mueller Dep. at. 99, (Ex. D);

(8) It takes approximately 8-10 seconds to empty a flask and all 98 flasks were emptied in approximately 30 minutes; Lilley Dep. at 95 (DE #75-10), Plts Answs to Def 1st Set of Interr. p. 24 (DE #75-3);

(9) The peanut pile had a 10 foot flat section on the top and the surface of the peanuts had dips, valley and ridges creating pockets where tablets could accumulate; Plts Answs to Def 1st Set of Interr. p. 15 (DE #75-3), Deposition of Stephen L. Brown ("Brown Dep. at") at 62 (Ex. F), Jones Dep. at 175 (Ex. E); and

(10) Neither applicator stopped to look into the dome until all 49,000 tablets had been shaken from the flasks so neither applicator had any way of knowing where the other person had already applied tablets; Turner Dep. at 174 (DE #75-7), Lilley Dep. at 87 (DE #75-10).

As acknowledged by defendants on page 7 in their memorandum, both Mr. Rich and Mr. Schumacher also rely on the testimony of plaintiffs' other experts, John Mueller and Dr. Steve Brown, as a basis for their opinion that IFC's application method resulted in piling.[3] Both Mr. Mueller and Dr. Brown have years of personal hands-on experience broadcasting aluminum phosphide tablets onto agricultural commodities and have personally dropped tablets onto surfaces of commodities. John Mueller, an experienced applicator of aluminum phosphide, testified that based upon his personal experience, piling of the tablets is unavoidable given the application method utilized by defendants. Mueller Dep. at 107, 109 (Ex. D). Similarly, Dr. Brown, an experienced applicator of aluminum phosphide for over 20 years who has also taught fumigation classes at the University of Georgia Extension Service, stated that based on his experience, he didn't see how piling could be avoided with the method used by defendants to apply the 49,000 tablets. Brown Dep. at 57, 60 (Ex. F). Both Mr. Mueller and Dr. Brown

[3] Defendants do not challenge the opinions of Mr. Mueller or Dr. Brown. Further, NFPA 921 recognizes that "an individual investigator may not have responsibility for, or be required to address, all of the issues described in this section" regarding fire cause determination. NFPA 921 § 18.1.3 (Ex. C).

analyzed and evaluated the application method used by IFC's applicators at the Severn dome and expressed their reasoned opinions in their respective expert reports and depositions. Expert Report of Stephen L. Brown (Ex. G); Expert Report of John B. Mueller (Ex. H).

Regardless, defendants argue that Messrs. Rich and Schumacher should have performed physical tests to support the opinion that the tablets were capable of piling. One need only look at Deposition Ex. 289 (Ex. I), a photograph taken by defendants' expert, Dale Mann, reflecting a pile of 100 tablets of aluminum phosphide on top of a mound of peanuts, to recognize that the tablets will pile. Furthermore, the videos of Dr. Carol Jones's experiments to establish the angle of repose of the Fumitoxin tablets confirm that tablets will pile. (DE #78 - awaiting signed Orders). As the applicator's manual clearly warns against allowing the tablets to pile, one would need to question why the EPA would require the manufacturer's manual to include such a warning if piling was impossible.

The Court's gatekeeper role does not require it to determine if the opinion is correct, only that it is reliable and can aid the finder of fact at trial. *United States v. Barnette,* 211 F.3d 803, 815 (4th Cir. 2000). To argue that physical testing was required for the principle that 49,000 tablets dropped from a small opening would result in piles misconstrues the role of a court in determining if the opinion is scientifically valid. Both Mr. Schumacher and Mr. Rich described the basis and reasoning supporting their opinion that piling occurred in their respective reports and depositions. There is nothing novel or scientifically invalid about their opinions given the number of tablets, method of application, and the configuration of the peanuts within the dome. As noted by one court, "[w]e do not require experts to drop a proverbial apple each time they wish to use Newton's gravitational constant in an equation." *Lapsley v. Xtek, Inc.*, 689 F.3d 802, 815 (7th Cir. 2012).

Defendants maintain that the only direct evidence is the testimony of the applicators who maintain that they did not see any piling when they shined the flashlight down in to the dome after completing the application. However, both applicators acknowledged that they could not see the entire pile when they looked with the flashlight; ("We looked in afterward. We didn't see anything piled but I know there's some areas in there we couldn't see." Lilley Dep. at 88, (DE #75-10); Turner Dep. at 174 (DE #75-7)). Furthermore, having testified that they did not know what constituted a pile of tablets, one must question what they were looking for and what they, in fact, actually observed. In any event, the applicators' testimony that they did not see piling is questionable given that their fumigation methods are at the center of this controversy. Such testimony may be the subject of vigorous cross examination and debate but it does not make the plaintiffs' experts' opinions scientifically unreliable.

IV. The Opinion of Mr. Schumacher and Mr. Rich that the Piling of the Fumitoxin Tablets Resulted in Ignition is Based on Valid Scientific Principles, a Sound Scientific Foundation, and is Widely Accepted

Defendants also argue that there is no scientific basis for Mr. Schumacher and Mr. Rich's opinion that piling of aluminum phosphide tablets resulted in ignition. They maintain, in essence, that this ignition scenario has no validity or scientific foundation and that the Court should reject it as pure speculation. Contrary to defendants' argument, and as demonstrated below, there is substantial scientific support for their ignition opinions and the reliability of those opinions, pursuant to the *Daubert* inquiry, is easily established.

A. Phosphine Gas is a Fire Hazard

As referenced in the scientific literature, aluminum phosphide reacts with atmospheric moisture to produce phosphine gas. The reaction is exothermic, meaning heat is produced from this reaction. The lower flammable limit (LFL) of phosphine is 18,000 parts per million. As reported in the scientific literature, phosphine has a very low auto ignition temperature, as low as

100.4° F. Phosphine gas is pyrophoric, which means it is capable of spontaneously combusting in air without needing elevated temperatures or an applied ignition source[4]. Schumacher Paper (Ex. A). As recognized by NFPA 921, the use of scientific literature is an important means to develop information that can be used in hypothesis testing. NFPA 921 § 4.3.6 (Ex. C).

As explained by Lester Rich in his deposition:

> Q Okay. Well, if you would, explain to me how and why a dry pile of aluminum phosphide tablets, A, will reach lower flammable limit of phosphine gas and, B, will result in a fire.
>
> A Because the product is designed and produced to be reacted individually, each pellet to be reacted individually, once you pile the product together, then that's what changes the dynamic of the reaction, the phosphine production, the configuration of the pile, the LEL being reached, the ammonia carbonate being driven off, the CO2 being driven – all those factors are uncontrollable and unpredictable once the Fumitoxin has been put in the pile.

Rich Dep. at 129 (DE #75-11).

B. <u>The Various Labels Required by the EPA Contain Clear Warnings and Explanations of the Risk of Ignition from the Piling of Tablets.</u>

Congress, under the Federal Insecticide, Fungicide and Rodenticide Act of 1947 (FIFRA), established a comprehensive scheme for the registration and regulation of pesticides, the purpose of which is to "protect man and his environment." S.Rep. No. 92–838. 92d Cong., 2d Sess. 1 (1972), U.S. Code Cong. & Admin. News 1972, p. 3993. FIFRA requires the registration of a pesticide with the EPA upon a determination, *inter alia,* that it will not cause "unreasonable adverse effects on the environment." 7 U.S.C. §§ 136a(c)(5). The EPA, pursuant to the statute, has promulgated exacting scientific testing requirements for the determination of adverse effects. *See* 40 C.F.R. Part 158, published at 49 Fed.Reg. 42856 (1984). *Merrell v. Thomas*, 608 F. Supp. 644, 647 (D. Or. 1985) <u>aff'd,</u> 807 F.2d 776 (9th Cir. 1986).

[4] See Schumacher's Report, reference nos. 54, 55, 56, 57, 59, 61, 62, 63, 69, 70, and 76 (DE #75-13). See Rich's Report, reference nos. 6, 43, 52, 53, and 59 (DE #75-8).

The EPA reviews all labels and has the sole authority to approve pesticide labeling which must contain specified information including precautionary statements for human and animal hazards and environmental hazards. 7 U.S.C.A. § 136d (a)(2). It requires that the label shall not be false or misleading. 40 CFR. §156.10. Specifically, the statute provides that "[w]arning statements on the flammability or explosive characteristics of the pesticide product are required if a product meets the criteria in this section." 40 CFR §156.78.

"Labeling" is defined to include all labels and other written, printed or graphic material, including all literature that accompanied the pesticide. 7 U.S.C.A. § 136 (p), N.C. Gen. Stat. § 143-460(19), (20). Both FIFRA and the North Carolina Pesticide law provides that it shall be unlawful for any person to use any registered pesticide in a manner inconsistent with its labeling. 7 U.S.C.A. § 136d (a)(2)(G). N.C. Gen. Stat. § 143-435(b)(3). All parties, including the IFC applicators and IFC's corporate representative, have acknowledged: **The Label is the Law**. Turner Dep. at 47-49 (DE #75-7), Lilley Dep.at 22-23 (DE #75-10), Deposition of IFC Corporate Representative Brad C. Henry at 54 (Ex. J).

The label attached to each flask of Fumitoxin states in pertinent part:

> *"Piling of Tablets or dust from their fragmentation my cause a temperature increase and confine the release of gas so that ignition could occur."* Deposition Ex. 3 (Ex. K).

The approved and mandated language contained in the applicator's manual for Fumitoxin is even more specific:

> 4.2 **Physical and Chemical Hazards**
>
> Aluminum phosphide in tablets, pellets and partially spent dust will release phosphine if exposed to moisture from the air or if it comes into contact with water, acids and many other liquids. Since phosphine may ignite spontaneously at levels above its lower flammable limit of 1.8-% v/v, it is important not to exceed this concentration. Ignition of high concentrations of phosphine can produce a very energetic reaction. Explosion can occur under these conditions and may cause severe personal injury. Never allow the buildup of phosphine to exceed

> explosive concentrations. Do not confine spent or partially spent aluminum phosphide fumigants as the slow release of phosphine from this material may result in formation of an explosive atmosphere. ***Aluminum phosphide tablets and pellets, outside their containers, should not be stacked or piled up or contacted with liquid water. This may cause a temperature increase, accelerate the rate of gas production and confine the gas so that ignition could occur.*** It is preferable to open containers of aluminum phosphide products in open air as under certain conditions, they may flash upon opening. (emphasis added)[5] Deposition Ex. 156 (Ex. L)

Both Messrs. Schumacher and Rich referenced and relied upon the EPA mandated labeling clearly describing the risk of fire caused by piling of tablets.[6] For defendants to argue that an ignition scenario caused by the piling of tablets is not generally accepted within the scientific community totally ignores the vital role played by the EPA in evaluating and overseeing the use of dangerous products and protecting the public. Given the EPA's required warnings on the issue, the court could take judicial notice of the risk of fire created by the piling.

Defendants would have the Court believe that the applicator's manual is just another generic technical manual put out by a manufacturer making arbitrary decisions as to what information should be given to the consumer. Such an argument ignores the fact that the federal statutes require informative and accurate information to be included in the Fumitoxin applicator's manual and imposes civil and criminal penalties for misleading and inaccurate information. 7 U.S.C.A. § 136q.

Furthermore, Defendants suggest that the warning that ignition can be caused by piling of the fumigant is simply a "precautionary statement" with no particular relevance or significance. The EPA requires that the cover page of the applicator's manual state: ***All parts of the labeling and applicator's manual are equally important for safe and effective use of this product.***

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5 Even the cardboard box in which the flasks of Fumitoxin are transported provides a label which states in part: *"Piling of Tablets or the dust from their decomposition may cause temperature increase and a flash could occur."* Deposition Ex. 283 (Ex. M).

6 Rich Report at p. 7 (DE #75-8); Schumacher Report at p. 11 (DE #75-13).

(emphasis added). As such, the precautionary statement under Section 4.1: Hazards to Humans and Domestic Animals which warns that aluminum phosphide is toxic to humans and fatal if swallowed is equally as important as the warning under Section 4.2: Physical and Chemical Hazards warning of the fire hazard from piling the tablets. *See* (Ex. L).

C. **Plaintiffs' Ignition Scenario has been Recently Accepted as Reliable by Another U S District Court**

In *Cargill, Inc. Et Al. v. Degesch America, Ind. et al.*, a case in the U S District Court, Eastern District of Louisiana, CA No. 11-2036 (attached), Judge Sarah S. Vance considered a motion to exclude expert testimony in a case with similar facts. There the plaintiffs alleged that the defendants improperly applied aluminum phosphide tablets onto the commodity stowed in cargo holds aboard the vessel, *Maria V.* Plaintiffs' experts opined that the fumigators allowed the aluminum phosphide tablets to pile, which caused the fumigant to create phosphine gas at an unsafe rate and the gas eventually combusted within the headspace of each cargo hold.

Defendants, having disclosed several of the same expert witnesses as in the case at bar, including Mr. Ryman and Mr. Mann, argued, as they do here, that the opinions of the plaintiffs' experts should be excluded as unsupported speculation. In denying the *Daubert* challenge to the opinion of plaintiffs' expert, Richard Bigler, the court noted that the opinion was based on the warnings in the applicators manual and on the published study co-authored by John Schumacher (Plaintiffs' expert whose opinion the defendants in the present case seek to exclude) and Zachary Jason. The court noted that:

> Schumacher and Jason review the methodologies and results of four series of tests conducted by two different laboratories regarding ignition of aluminum phosphide based fumigants. They additionally conduct a case study of a fire that occurred in a metal grain storage bin after fumigation. They conclude "One of the most important variables in initiating the fire is concentrating the fumigant because a minimum number of tablets or pellets are required to generate enough phosphine to reach the [lower flammable level] and subsequently ignite. **There is no indication that Schumacher and Jason's study has been discredited or widely**

> **criticized. The court finds that the study establishes, by a preponderance of the evidence, that Bigler's reasoning is valid and not based merely on subjective belief or unsupported speculation.** (emphasis added)

Mr. Schumacher was questioned about his study during his deposition by opposing counsel and testified to his findings. Schumacher Dep. at 145 - 149, 156-161 (DE #75-12). Lester Rich cited the Schumacher article in his expert report and was questioned about it during his deposition as well. Rich Report at 22, item 52 (DE #75-8); Rich Dep. at 127, 136 (DE #75-11).

Judge Vance did exclude the testimony of Plaintiffs' expert, Dr. John Atherton who expressed a similar opinion but he was excluded because he did not reference the basis for his opinion. The court acknowledged that the applicator's manual, as well as manuals for similar fumigants, stated the fumigant should not be piled. The court further noted, however, that unlike Mr. Bigler, Dr. Atherton's report did not state that he relied on those manuals (or apparently any other reference material) and as such his opinion was unsupported speculation. In the case at bar, however, both John Schumacher and Lester Rich stated that they rely in part on the EPA's mandated label which includes the applicators manual and on other materials and evidence, as described herein. Rich Report at p.7 (DE #75-8); Schumacher Report at p. 11 (DE #75-13).

D. The Fumigation Industry's General Acceptance of Plaintiffs' Experts' Ignition Opinions

There are numerous other aluminum phosphide based pesticides manufactured by other companies and marketed under different trade names. Each company is required to register its product with the EPA. In each instance, nearly identical language warning of the risk of fire from piling is included in their manual. For example, John Schumacher specifically referenced in his report the warning in the manual for Weevil-Cide, an aluminum phosphide based pesticide manufactured in India and distributed in the United States. Schumacher's Expert Report at fn 72

(DE #75-13). Similarly, the applicator's manual for Phostoxin, a German product distributed by Degesch in the United States, contains the identical warning that piling can result in ignition. *See* Excerpt of Deposition Ex. 184 (Ex. N).

E. Defendant IFC's General Acceptance of Plaintiffs' Experts' Ignition Opinions

Further support comes from the testimony of the IFC applicators, Messrs. Turner and Lilley, who, when discussing their training, acknowledge the following:

> Q: Have you ever heard that piling up tablets can result in ignition or result in a fire?
>
> A: In our training, it could result—I was told it could result in a fire.

Turner Dep.at 44. (DE #75-7).

> ----
>
> Q: IFC told you that the aluminum phosphide tablets could catch on fire if they were piled up?
>
> A: Yes.

Lilley Dep.at 32 (DE #75-10).

F. Academic General Acceptance of Plaintiff's Experts' Ignition Opinions

In addition to the various manufacturer and distributor's express warnings mandated by the EPA, the literature produced by various universities and state extension services warn of the risk of fire from piling aluminum phosphide tablets. For example, the publication, Stored Product Protection, distributed by the Kansas State University Research and Extension, provides in Chapter 14, (Fumigation):

> Phosphine pellets and tablets are prone to smoldering. Ignition and fires can occur within buildings or grain masses when they are deposited in piles in which the pellets are touching each other or when standing water is present. As with spontaneous combustion under high concentration, fire hazard from "piling" can be avoided by proper application. Deposition Ex. 277 at 163. (Ex. O).

Kathy Flanders of Auburn University along with plaintiffs' expert, Dr. Steve Brown of the University of Georgia, published a paper entitled "Fumigating Agricultural Commodities with Phosphine", which states in part at page 3, Deposition Ex. 276 (Ex. P):

> "Too much aluminum phosphide in any one spot can lead to fires and explosions."

Interestingly, the Oklahoma State University Fumigation Manual utilized for pesticide application training states:

> Tablets or pellets should be placed in shallow layers, never stacked on top of each other. Stacking causes the ash on the outside of the mass to seal off the interior pellets/tablets, slowing or stopping their decomposition and gas release. This creates a hazard to personnel and risk of explosion or fire. Deposition Ex. 322 at 31 (Ex. Q).

Even defendants' own expert, Dr. Carol Jones, an associate professor from Oklahoma State University, acknowledged and confirmed that the OSU Fumigation Manual contained reliable information and that the warnings contained therein were based on valid scientific principles and valid research. Jones Dep. at 139 (Ex. E).

G. Defendants' Own Experts Acknowledge the General Acceptance of Plaintiffs' Experts' Ignition Opinions

Further support for the general acceptance of the ignition opinions expressed by John Schumacher and Lester Rich comes directly from the testimony of defendants' expert witnesses. Dennis Ryman, disclosed as defendants' expert and identified as the most knowledgeable employee of Degesch, a manufacturer of aluminum phosphide, regarding the fire hazards associated with the Fumitoxin tablets, testified as follows:

> Q: Okay. Now, jump down to last paragraph of page 2 of your report and you- well I'll just read the whole sentence. "In my opinion, the application of 49,000 Fumitoxin tablets through a single hatch in the headhouse by broadcasting the tablets out of their flasks and across the top of the peanut pile was a reasonable way to applying the Fumitoxin, consistent with industry standards and did not create a significant risk of fire." You're not saying it's not creating any risk of fire. You're saying it did not create a significant risk, correct?

A: Those are my words, yes.

Q: Right. You're not ruling out that there was no risk, correct?

A: No.

Q: There's still a risk of fire in the manner in which they applied the Fumitoxin, correct?

A: Yes. In accordance with the label, yes.

Q: **Right. By using the word significant, you're conceding are you not, that there was still some risk of fire that could result from the -- from the way they applied the fumigant, correct?**

A: **Correct, because I could not possibly say that we've eliminated all risk of f**ire.

Deposition of Dennis Ryman ("Ryman Dep. at") at 214-215 (Ex. R)

Q: You say, "the unlikelihood of a fire resulting from the mere piling or stacking." You don't say that it was impossible that a fire resulted from the piling or stacking, correct?

A: That's correct.

Q: **So the possibility still exists that the fire was created by that condition, piling or stacking, correct?**

A: **Yes.**

Ryman Dep. at 258 (Ex. R).

John Walker, Defendants' fire origin and cause expert also testified as follows:

Q: And so do you agree it's scientifically possible for piling or stacking of aluminum phosphide tablets without being exposed to liquid water to cause a fire?

A: It's theoretically possible. In real life, doubtful.

Q: But it's not scientifically impossible, correct?

A: It's not scientifically impossible.

Deposition of John D. Walker ("Walker Dep. at") at 208. (Ex. S)

H. Case Studies Verify Plaintiffs' Experts' Ignition Opinions

In further support for their ignition opinions, both John Schumacher and Lester Rich relied upon various other sources involving fires determined to be caused by improper application of aluminum phosphide based fumigant including: a report by the Australian Transport Safety Bureau regarding a fire on board the Bulk vessel Jin Hui, Deposition Ex. 183A,

(Ex. T); a member alert from the Swedish Club (Protection and Indemnity Association) regarding fire on board a vessel, Deposition Ex. 182, (Ex. U); and a memorandum from the State of California Environmental Protection Association, Department of Pesticide Regulation, Deposition Ex. 316, (Ex. V).

I. Eyewitness Accounts Verify Plaintiffs' Experts' Ignition Opinions

In addition, both John Schumacher and Lester Rich rely in part on the eyewitness accounts of plaintiffs' expert, John Mueller, a certified fumigator who has first-hand experience with an aluminum phosphide based fumigant igniting after being piled during a fumigation. Mr. Mueller described in his deposition how the fumigant congregated in piles and thereafter began popping and igniting requiring him to reenter the structure and redistribute the pellets. Mueller Dep. at 47-51 (Ex. D).

V. Physical Testing of the Ignition Opinion Was Not required

A. NFPA 921 Does Not Require Fire Investigators to Conduct Physical Experiments

Defendants also argue that a physical test of the ignition scenario is necessary for plaintiffs' experts' opinions to be valid and reliable. Apparently, defendants argue that nothing short of physically duplicating the phenomenon is sufficient and, in essence, ask this Court to ignore: (1) the EPA regulated applicator's manual/label with its express warnings; (2) the literature provided by various other aluminum phosphide manufacturers and distributors; (3) the academic and/or state research and extension service papers and reports; (4) the various case studies documenting ignition from piling; (5) the eyewitness account of John Mueller; (6) the acknowledgement of the risk of ignition from IFC and their very own experts; and (7) the scientific literature detailing the reaction of aluminum phosphide and the pyrophoric nature of phosphine gas. Defendants argue that only conducting a physical experiment and personally

repeating the event will suffice. However, defendants' position is contrary to the accepted methodology for fire investigations which does not require such physical experiments be conducted.

In NFPA 921, the pertinent section on testing states:

> §4.3.6 Test the Hypothesis (Deductive Reasoning)
>
> The investigator does not have a provable hypothesis unless it can stand the test of careful and serious challenge. Testing of the hypothesis is done by the principle of deductive reasoning, in which the investigator compares his or her hypothesis to all known facts as well as the body of scientific knowledge associated with the phenomenon relevant to the specific incident. **A hypothesis can be tested either physically by conducting experiments or analytically by applying scientific principles in "thought experiments"**. (emphasis added) (Ex. C)

The commentary for §4.3.6 refutes defendants' position that physical testing and experiments are required:

> This discussion is meant to specifically allow for logic based "thought experiments." An example of a thought experiment is "If the door was closed during the fire, then there should be a mirror image patterns on the matching surfaces of the hinges." It is not necessary to burn the door in the open position and in the closed position and compare the results. NFPA 921 § A.4.3.6 (Ex. C)

It is particularly remarkable that defendants take the position that physical testing is required where defendants' own fire and origin cause expert, John Walker, testified that physical testing is not required. Having opined that the fire in the Severn dome was caused by spontaneous combustion of the peanuts, Mr. Walker testified as follows:

Q: Now, you didn't do any testing to test the hypothesis that you conclude was the cause of the fire, correct?

A: I didn't do any testing that was a chemical test, but I tested my hypothesis by using data that was available.

Q: Right. And that's sometimes referred to as deductive testing, is that correct?

A. That's correct.

Q: And then that's permitted by NFPA 921. That's a valid form of testing, correct.

A. Yes, sir.

Q: Did you do any to test your hypothesis, physical testing, did you do any physical testing to test your hypothesis that spontaneous combustion of the peanuts was the cause of the fire:

A: No, I did not.

Q: That type of physical testing, physical testing to test that hypothesis was feasible, correct?

A: It could have been done.

Q: Right. The fact that it-that testing wasn't done, in your opinion, does not invalidate your opinion, correct?

A: Correct.

Q: So one doesn't need to do physical testing to test a hypothesis, physical testing, correct?

A: Correct.

Walker Dep. at 193-194. (Ex. S)

Similarly, when Lester Rich was questioned as to what type of testing he conducted, he verified the deductive testing he followed was in accordance with NFPA 921 stating:

> I have taken the scientific method and the cognitive test and the facts that are presented in this case and applied them and tested the hypothesis against all of the information, the literature, the facts, the witness statements, the –all the information that's involved with the case. Rich Dep. at 152-153 (DE #75-11).

As documented in his report, John Schumacher also followed the scientific and systematic method in NFPA 921 by performing cognitive testing of each alternative hypothesis against the facts of the case and the scientific literature.

B. The Case Law Does Not Require Physical Testing in All Daubert Inquiries

Defendants cite various cases in an attempt to support their argument that physical testing is required in all *Daubert* inquiries including the present case. However, the cases cited by defendants are all distinguishable from the present *Daubert* challenge in one significant aspect rendering defendants' cited cases inapplicable. In the cases cited by defendants, the various

experts whose testimony was excluded failed to base their conclusions on any reliable scientific foundation. In general, the cases cited by defendants hold that testing, or other means of establishing validity or reliability, is needed where the expert has failed to show the basis of his opinion or provide any support on which the court can rely. The cases do not hold that an expert, having followed a reliable methodology, must also have specifically performed physical testing. Such a holding would be contrary to *Daubert* and it progeny which provides that the inquiry is flexible and the court has broad latitude to consider whatever factors it finds to be useful. *Westberry supra*.

For example, in *Fireman's Fund Ins. Co. v. Tecumseh Prods. Co.*, 767 F. Supp. 2d 549, 555 (D. Md. 2011), cited by defendants, the court acknowledged the unique aspect of that expert's hypothesis and noted that neither the Plaintiff nor the expert described "any attempt to gather data or create conditions that might falsify his explanation, which is what testing, in its, scientific sense means." It noted "at a minimum, a proper test of the unique hypothesis would have involved an attempt to replicate it or some form of documentary evidence of the same process occurring elsewhere." (emphasis added)

Likewise in *Peters-Martin v. Navistar Int'l Transp. Corp., No. DKC 2005-2988 (D. Md. Aug. 14, 2008) (unpublished and attached), aff'd, No. 09-1200* (4th Cir. Feb. 9, 2011) (attached to defendants' Supporting Memorandum) the court affirmed the exclusion of plaintiff's expert because the expert did not cite any scientific research supporting his conclusion. Absent such research, physical testing is one way to show reliability. In this case, the expert did not perform any tests or cite to any scientific research.

Similarly, in *Fuesting v. Zimmer, Inc.*, 421 F.3d 528 (7th Cir. 2005) the court concluded that plaintiff's expert did not have a sufficiently reliable scientific foundation. There, the

expert's opinion was ruled inadmissible, not solely because he did not perform testing but because he did not follow a scientific methodology nor rely upon any other tests or studies to support his conclusions. (emphasis added). Testing is one basis of many that can be used as the foundation to prove the reliability of a scientific theory.

Furthermore, numerous cases have held that the physical testing is not required. In *Westfield Ins. Co. v. J.C. Penney Corp., Inc.*, 466 F. Supp. 2d 1086 (W.D. Wis. 2006) the court held that a licensed electrical engineer's methodology for arriving at his opinion that a cord attached to lamp was defective and that arcing in the cord caused the fire were sufficiently reliable under *Daubert* because "… one of the proper ways for an expert to identify the source of a fire is by eliminating other potential sources …[.]" *Id*. at 1094. Although defendant argued that the expert did not x-ray the cord, calculate its length, or prepare an arc map, the court concluded his methods were reliable notwithstanding that the expert might have conducted physical tests to arrive at his conclusion. *Id*.

In *Stoots v. Werner Co*, No. Civ. A 7:04CV00531 (W.D. Va. Dec. 28, 2005) (unpublished and attached) the court held that even though the plaintiff's experts did not perform certain testing they deemed unnecessary, the absence of such testing does not preclude them from offering opinions based on sufficient facts, reliable principles and methods, and a reliable application of the principles and methods to the facts of the case. *Id*. at *5.

The court in *Argonaut Ins. Co. v. Samsung Heavy Indus. Co. Ltd.*, 929 F. Supp. 2d 159 (N.D.N.Y. 2013) considered the argument that an expert's testimony should be excluded due to his failure to cite any engineering treatise or peer-review and his failure to perform physical testing. The court rejected that argument and noted that there was no evidence that the expert's opinions approached the outer boundaries of traditional scientific and technological knowledge

or were based on novel scientific evidence. After listing the numerous factors on which the expert's opinions were grounded, it stated "the fact that Miles', or any expert offered herein, may have neglected to perform some "essential" tests or measurements will go to the weight of his testimony, not its admissibility. Moreover, it noted the absence of peer review and publication is not dispositive because this is only one prong of the *Daubert* reliability test. *Id*. at 169-170.

In *United Fire & Cas. Co. v. Whirlpool Corp.*, 704 F.3d 1338 (11th Cir. 2013), a case cited by Defendants, the 11th Circuit Court of Appeals reversed the exclusion of two experts. With regard to one of the expert's origin determination, the Court found:

> Mr. Arms's testimony that the fire originated from the dryer was rooted in his investigation of the scene of the fire and an examination of the dryer in accordance with the principles of the "NFPA 921" guide for fire and explosion investigations, a peer reviewed fire investigation guide that is the industry standard for fire investigation; (citing *Travelers Prop. & Cas. Corp. v. Gen. Elec. Co.*, 150 F. Supp. 2d 360, 366 (D. Conn. 2001)) (NFPA 921 is "a peer reviewed and generally accepted standard in the fire investigation community").

Id. at 1341.

The comments of the Court of Appeals are instructive relating to the other expert:

> Pointing to Dr. Clarke's failure to cite some type of publication supporting his testimony that the metal in the tube melts at 2800 degrees, the district court ruled that the testimony did not satisfy the minimum indicia of reliability outlined in *Daubert*. However, reference to a published study involving dryer ducts is not necessary to demonstrate minimum scientific reliability. *See Daubert*, 509 U.S. at 593 ("Publication (which is but one element of peer review) is not a *sine qua non* of admissibility; it does not necessarily correlate with reliability...."). Indeed, given that the scientific literature on dryer ducts or low carbon steel may not be extensive, the fact that Dr. Clarke was not aware of any literature finding that dryer ducts have reached temperatures of 2800 degrees Fahrenheit hardly suggests that the methodology underlying Dr. Clarke's conclusion was not minimally reliable. Dr. Clarke gave an extensive explanation of his methodology and explained how his education assisted him in reaching his conclusions.

Id. at 1342.

Contrary to the factual circumstances in the cases relied upon by the defendants, the opinions of plaintiffs' origin and cause experts are based on sufficient facts, reliable scientific

principles and methods and reliable application of the principles and methods to the facts of the case. *Stoots v. Werner,* No. Civ. A. 7:04CV00531 at *5 (W.D. Va. Dec. 28, 2005).

C. UL Tests Cited by Defendants Do Not Invalidate the Scientific Principles Relied Upon by Plaintiff's Experts

Defendants cite four published reports involving physical tests of various amounts of aluminum phosphide tablets and pellets, ranging from 1 tablet and pellet to a maximum of 30 tablets and 90 pellets. Defendants appear to allege these tests establish that ignition cannot occur from piled aluminum tablets without the addition of liquid water.[7] If this is defendants' position, however, it is contrary to the plain language of the EPA mandated warnings:

> *Aluminum phosphide tablets and pellets, outside their containers, should not be stacked or piled up **or** contacted with liquid water. This may cause a temperature increase, accelerate the rate of gas production and confine the gas so that ignition could occur.* (emphasis added).

Defendants rely on the concept of negative proof and faulty logic: Defendants argue that because Underwriters Laboratories ("UL") could not replicate "real world" conditions in a laboratory, that ignition by piling cannot occur. UL performed 125 tests and achieved ignition with liquid water in only 8. Based on the results, it is possible they could have performed the 117 tests and not achieved ignition at all. In that situation, if they had stopped at 117 tests

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[7] Defendants cite language in the material safety data sheet ("MSDS") for Fumitoxin, supplied by Degesch, that references contact with liquid water. However, defendants neglect to cite another section of the MSDS entitled "Other Precautions" that states in pertinent part:

> 2. Do not pile up large quantities of Fumitoxin during fumigation or disposal.
> 3. Once exposed do not confine Fumitoxin or allow phosphine concentration to exceed the LEL
> 4. ……Phosphine in the headspace of containers may flash upon exposure to atmospheric oxygen.
> 6. **See EPA approved labeling for additional precautions and directions for use.** (emphasis added)

Deposition Exhibit 275 at 4 (Ex. W).

Defendants' expert, Dennis Ryman, explained that the flash that is sometimes observed upon opening a flask is the ignition of phosphine gas at ambient temperature without the presence of liquid water. Ryman Dep. at 156-157 (Ex. P).

without achieving ignition, an erroneous assumption would have been that their testing proved ignition was impossible.

Further, John Schumacher examined the various test methods and described and evaluated them in his published paper. Schumacher noted in his paper:

> "The four studies did not adequately evaluate the reaction of solid fumigants with water vapor in the air and moisture in the grain when the fumigants were unevenly distributed in real-world quantities of grain." (Ex. A)

Interestingly, while defendants acknowledge that one can achieve ignition from piling of aluminum phosphide tablets when liquid water is added, defendants' expert, Dale Mann, conducted four experiments adding liquid water to tablets and yet failed to achieve ignition in all four experiments. Deposition of Dale C. Mann ("Mann Dep. at") at 108-109 (Ex. X). When questioned regarding his four failed experiments, Mann stated: "I didn't – I didn't develop the conditions necessary for ignition even though all of the conditions were theoretically present." Mann Dep. at 108 (Ex. X).

Significantly, a series of tests test performed by Fire Findings, a forensic engineering firm, further illustrates the point that conditions must be right to achieve ignition, even in circumstances that most people would agree would result in a fire. While no one would question that a lit cigarette dropped into a wastebasket full of trash could cause a fire, it took Fire Findings 132 tries before they achieved flaming combustion. The tests confirmed it is a matter of having the right conditions. Deposition Ex. 292 (Ex. Y). Similarly, the tests performed by UL and by Dale Mann relied upon by defendants simply speak to the conditions existing in those particular experiments.

In any event, the existence of contrary evidence does not make the Plaintiffs' opinions unreliable under a *Daubert* inquiry. Such evidence can be used to challenge the credibility of the expert's opinions but it does not prove that those opinions are unreliable.

VI. Defendants Erroneous Argument of a Premature Opinion goes to Credibility

Lastly, defendants argue that Lester Rich's opinions were formed prematurely and before he had evaluated all of the data in this case. Mr. Rich was questioned about the Severn matter while being deposed on another aluminum phosphide related fire which he had investigated and during that deposition expressed a "working hypothesis" for the Severn fire. He testified, however, that he did not reach his final opinion in the case at bar until it was time to issue his report, that he considered all of the data gathered in his investigation, and that he would have revised or changed his opinion if he had seen any facts or data inconsistent with his preliminary opinion. Rich Dep. at 319-320 (DE #75-11). Mr. Rich did exactly what NFPA 921 requires. These initial hypotheses should be considered working hypotheses, which upon testing may be discarded, revised or expanded in detail as new data is collected during the investigation and new analyses are applied. NFPA 921 § 4.1 – 4.3.6 (Ex. C).

In defendants' discussion of the holding in *State Farm v. Jarden 2010 U. S. Dist. LEXIS 60327*, defendants omitted important language included by the court. After noting that the expert in question relied on little more that superficial observation of the heater and that none of his methods qualify as scientific analysis, the court stated:

> "Because it is unmistakenly clear that Jones developed his opinions well before the facts underpinning the case were developed, ***and because those opinions were formed without sufficient reliance upon the scientific method and an adequate analysis of the data and circumstances of the fire in this case,*** Jones opinions must be deemed unreliable. (emphasis added).

Contrary to the facts in the *State Farm* case, Mr. Rich's "working" hypothesis followed an extensive and prolonged onsite investigation at the Severn facility in August, 2009. Furthermore, his final opinion in the case at bar expressed in his report involved a thorough review and analysis of all of the data, facts and circumstances of the case and a reliance on the scientific method pursuant to NFPA 921. Defendants' unsubstantiated argument that Mr. Rich

"unavoidably" filtered information through his predetermined opinion may serve as fodder for cross examination but it goes solely to the credibility of the witness and nothing more.

CONCLUSION

For all of the above stated reasons, plaintiffs respectfully request that defendants' Motion to Exclude Plaintiffs' Expert Witnesses Lester Rich and John Schumacher be denied in its entirety. However, if this Court is inclined to grant defendants' motion as it related to the opinions of Mr. Rich and Mr. Schumacher, plaintiffs request an evidentiary hearing prior to the Court's ruling.

This the 5th day of December, 2013.

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a true and correct copy of Plaintiffs' Memorandum of Law in Opposition to Motion to Exclude Plaintiffs' Expert Witnesses was caused to be served electronically upon the counsel of record stated below through the CM/ECF system, on this the 5th day of December, 2013:

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